

IN THE CLAIMS

1-36. (canceled).

37. (currently amended) A method of inhibiting bone resorption in a mammal in need thereof comprising administering to the mammal ~~a modulator of an osteoprotgerin binding protein,~~ wherein ~~the modulator is an~~ antagonist antibody or fragment thereof which binds an osteoprotegerin binding protein from residues 1 to 317 as shown in Figure 4 (SEQ ID NO:39).

38. (canceled)

39. (previously presented) The method of Claim 37 wherein the antibody is a monoclonal antibody or fragment thereof.

40. (previously presented) The method of Claim 37 wherein the antibody is a recombinant antibody or fragment thereof.

41. (currently amended) The method ~~antibody or fragment~~ of Claim 40 ~~which~~ wherein the antibody or fragment is a chimeric antibody or a CDR-grafted antibody or a fragment thereof.

42. (currently amended) The method of Claim ~~38-37~~ wherein the antibody is a human antibody or fragment thereof.

43. (currently amended) The method ~~antibody or fragment~~ of Claim 42 wherein the antibody is prepared by immunization of a transgenic animal capable of producing human antibodies.

44. (previously presented) The method of Claim 37 wherein the antibody or fragment thereof binds to an epitope on the extracellular domain or to an epitope on a fragment of the extracellular domain of an osteoprotegerin binding protein.

45. (currently amended) The method ~~antibody or fragment~~ of Claim 44 wherein the epitope comprises the BB' loop of an osteoprotegerin binding protein.

46. (currently amended) The method ~~antibody or fragment~~ of Claim 44 wherein the epitope comprises the EF loop of an osteoprotegerin binding protein.

47. (previously presented) The method of Claim 37 wherein the antibody or fragment further comprises a composition comprising a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

48. (currently amended) The method of any of Claims 37, 39, 40, 41, 42, 44 or [-] 47 further comprising administering one or more of a bone morphogenic factor (BMP-1 to BMP-12), transforming growth factor- β , a transforming growth factor- β family member, a fibroblast growth factor ~~selected from the group consisting of~~ (FGF-1 to FGF-10), an interleukin-1 inhibitor, a TNF α inhibitor, parathyroid hormone, an E series prostaglandin, a bisphosphonate, or a bone-enhancing mineral.

49. (currently amended) The method of any of Claims 37, 39, 40, 41, 42, 44 or [-] 47 wherein bone resorption is associated with a bone disease selected from the group consisting of osteoporosis, osteomyelitis, hypercalcemia, osteopenia brought on by surgery or steroid administration, Paget's disease, osteonecrosis, bone loss due to rheumatoid arthritis, periodontal bone loss, osteopenia due to immobilization, prosthetic loosening and osteolytic metastasis.

50. (previously presented) The method of Claim 37 wherein the antibody or fragment thereof binds to a membrane associated form of osteoprotegerin binding protein.

51. (previously presented) The method of Claim 37 wherein the antibody or fragment thereof binds to a soluble osteoprotegerin binding protein.

52. (currently amended) A method of inhibiting osteoclastogenesis in a mammal comprising administering a ~~modulator of an osteoprotegerin binding protein, wherein the modulator is to the mammal~~ an antagonist antibody or fragment thereof which binds an osteoprotegerin binding protein from residues 1-317 as shown in Figure 4 (SEO ID NO:39).

53. (canceled)

54. (previously presented) The method of Claim 52 wherein the antibody is a monoclonal antibody or fragment thereof.

55. (previously presented) The method of Claim 52 wherein the antibody is a recombinant antibody or fragment thereof.

56. (previously presented) The method of Claim 52 wherein the antibody is a chimeric antibody or a CDR-grafted antibody.

57. (previously presented) The method of Claim 52 wherein the antibody is a human antibody or fragment thereof

58. (currently amended) The ~~method antibody or fragment~~ of Claim 57 ~~which~~ wherein the antibody is prepared by immunization of a transgenic animal capable of producing human antibodies.

59. (previously presented) The method of Claim 52 wherein the antibody or fragment thereof binds to an epitope on

the extracellular domain or to an epitope on a fragment of the extracellular domain of an osteoprotegerin binding protein.

60. (currently amended) The method ~~antibody or fragment~~ of Claim 59 wherein the epitope comprises the BB' loop of an osteoprotegerin binding protein.

61. (currently amended) The method ~~antibody or fragment~~ of Claim 59 wherein the epitope comprises the EF loop of an osteoprotegerin binding protein.

62. (previously presented) The method of Claim 52 wherein the antibody or fragment thereof binds to a membrane associated form of osteoprotegerin binding protein.

63. (previously presented) The method of Claim 52 wherein the antibody or fragment thereof binds to a soluble osteoprotegerin binding protein.

64. (previously presented) The method of Claim 52 wherein the antibody or fragment further comprises a composition comprising a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

65. (currently amended) The method of any of Claims 52, 54, 55, 56, 57, 59, 62, 63, or [-] 64 further comprising administering one or more of a bone morphogenic factor ~~selected from the group consisting~~ (BMP-1 to BMP-12), transforming growth factor- β , a transforming growth factor- β family member, a fibroblast growth factor ~~selected from the group consisting of~~ (FGF-1 to FGF-10), an interleukin-1 inhibitor, a TNF α inhibitor, parathyroid hormone, an E series prostaglandin, a bisphosphonate, or a bone-enhancing mineral.

66. (currently amended) The method of any of Claims 52, 54, 55, 56, 57, 59, 62, 63, or [-] 64 wherein osteoclastogenesis

is associated with a condition selected from the group consisting of osteoporosis, osteomyelitis, hypercalcemia, osteopenia brought on by surgery or steroid administration, Paget's disease, osteonecrosis, bone loss due to rheumatoid arthritis, periodontal bone loss, osteopenia due to immobilization, prosthetic loosening and osteolytic metastasis.

67. (new) The method of Claims 37 or 52 wherein the mammal is a human.

68. (new) The method of Claims 37 or 52 wherein the antibody is raised against an osteoprotegerin binding protein comprising the amino acid sequence as shown in Figure 4 (SEQ ID NO:39) from residues 1-317 or an immunogenic fragment thereof.

69. (new) The method of Claim 37 or 52 wherein the antibody is raised against an osteoprotegerin binding protein comprising the amino acid sequence as shown in Figure 4 (SEQ ID NO:39) from residues 69-317.